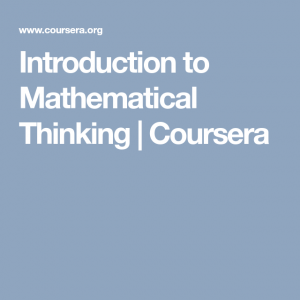
**LEVEL I**

[**1.) Introduction to Mathematical Thinking**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/mathematical-thinking)

**[](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/mathematical-thinking)**

**Course  Available :**[**Click Now (Special Discount Here)**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/mathematical-thinking)

School: Stanford  
Platform: Coursera  
Instructor:[**Keith Devlin**](http://web.stanford.edu/~kdevlin/)

Length: 10 Week

This ten-week course is designed with two particular audiences in mind. First, people who want to develop or **improve** mathematics-based, analytic thinking for professional or general life purposes. Second, high school seniors contemplating a mathematics or math-related major at **college or university**, or first-year students at college or university who are thinking of majoring in mathematics or a math-dependent subject.

[**2. Data Science Maths Skills**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/datasciencemathskills)

**[](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/datasciencemathskills)**

**Course  Available :**[**Click Now (Special Discount Here)**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/datasciencemathskills)

**Duration:** 4 weeks

**Instructor:** Duke University (Coursera)

**Prerequisites:** Basic maths skills

This course is designed to teach learners the basic math you will need in order to be successful in almost any data science math course and was created for learners who have basic math skills but may not have taken algebra or pre-calculus.

Data Science Math Skills introduces the **core math** that data science is built upon, with no extra **complexity**, introducing unfamiliar ideas and math symbols one-at-a-time.

[**3. Introduction to Descriptive Statistics**](https://www.udacity.com/course/intro-to-descriptive-statistics--ud827)

**[](https://www.udacity.com/course/intro-to-descriptive-statistics--ud827)**

**Course  Available :**[**Click Now (Special Discount Here)**](https://www.udacity.com/course/intro-to-descriptive-statistics--ud827)

**Duration:** 8 weeks

**Instructor:** Udacity

**Prerequisites:** None

Statistics is an important field of math that is used to **analyze, interpret, and predict outcomes** from data. Descriptive statistics will teach you the **basic concepts** used to describe data.

This is a great beginner course for those interested in Data Science, Economics, Psychology, Machine Learning, Sports analytics and just about any other field.

[**5. Introduction to Inferential Statistics**](https://www.udacity.com/course/intro-to-inferential-statistics--ud201)

**[](https://www.udacity.com/course/intro-to-inferential-statistics--ud201)**

**Course  Available :**[**Click Now (Special Discount Here)**](https://www.udacity.com/course/intro-to-inferential-statistics--ud201)

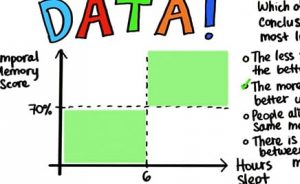
**Duration:** 8 weeks

**Instructor:** Udacity

**Prerequisites:**Complete understanding of Descriptive Statistics (the course mentioned above)

Inferential statistics allows us to d**raw conclusions from data** that might not be immediately obvious. This course focuses on enhancing your ability to develop hypotheses and use common tests such as **t-tests, ANOVA tests, and regression** to validate your claims.

[**6. Introduction to Probability and Data**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/probability-intro)

**[](https://www.udacity.com/course/intro-to-descriptive-statistics--ud827)**

**Course  Available :**[**Click Now**](https://www.udacity.com/course/intro-to-descriptive-statistics--ud827)

**Duration:** 5 weeks

This course introduces you to **sampling and exploring data**, as well as basic probability theory and Bayes’ rule. You will examine various types of sampling methods, and discuss how such methods can impact the scope of inference. A variety of exploratory data analysis techniques will be covered, including numeric summary statistics and basic data visualization.

You will be guided through installing and using **R and RStudio** (free statistical software), and will use this software for lab exercises and a final project. The concepts and techniques in this course will serve as building blocks for the **inference and modeling** courses in the Specialization.

[**7.) Math is Everywhere: Applications of Finite Math**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=39197&murl=https://www.udemy.com/math-is-everywhere-applications-of-finite-math/)

**[](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=39197&murl=https://www.udemy.com/math-is-everywhere-applications-of-finite-math/)**

**Course  Available :**[**Click Now**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=39197&murl=https://www.udemy.com/math-is-everywhere-applications-of-finite-math/)

**Special Offer FREE**

**Duration:** 1 week

Through this course, you can better understand how you benefit from applications of **finite math** in your every day life.  Along the way, you will likely learn new mathematical ideas, too.

Equations of lines can allow computers to create fonts, store them quite compactly, and render them at essentially any desired resolution.  **Plotting the graph** of a polynomial can affect how you play Angry Birds as you strive to dislodge the pesky pigs.

Linear systems**model** the performance of sports teams and influence which college football teams play in the new year bowl games. Finally, **probability and simulation** lies at the core of the mathematical algorithm that catapulted Google as a leader in search engines.

[**8.) Probability: Basic Concepts & Discrete Random Variables**](https://www.edx.org/course/probability-basic-concepts-discrete-purduex-416-1x)

**[](https://www.edx.org/course/probability-basic-concepts-discrete-purduex-416-1x)**

**Course  Available :**[**Click Now**](https://www.edx.org/course/probability-basic-concepts-discrete-purduex-416-1x)

**Duration:** 6 weeks

In this statistics and data analysis course, you will be provided an introduction to mathematical probability to help meet your **career goals** in the exciting new areas becoming known as information science.

In this course, they first introduce basic probability concepts and rules, including **Bayes theorem**, probability mass functions and CDFs, joint distributions and expected values.

Then they discuss a few important probability distribution models with discrete random variables, including **Bernoulli and Binomial distributions, Geometric distribution,**Negative Binomial distribution, Poisson distribution, Hypergeometric distribution and discrete uniform distribution.

[**9.) Mathematical Biostatistics Boot Camp 1**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/biostatistics)

**[](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/biostatistics)**

**Course  Available :**[**Click Now**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/biostatistics)

**Duration:** 4 weeks

This class presents the fundamental probability and statistical concepts used in elementary data analysis. It will be taught at an introductory level for students with **junior or senior college-level** mathematical training including a working knowledge of calculus.

A small amount of linear algebra and programming are useful for the class, but not required.

[**11.) Applications of Linear Algebra Part 1**](https://www.edx.org/course/applications-linear-algebra-part-1-davidsonx-d003x-1)

**[](https://www.edx.org/course/applications-linear-algebra-part-1-davidsonx-d003x-1)**

**Course  Available :**[**Click Now**](https://www.edx.org/course/applications-linear-algebra-part-1-davidsonx-d003x-1)

**Duration:** 5 weeks

**Instructor:** Davidson College (edX)

From simulating **complex phenomenon** on supercomputers to storing the coordinates needed in **modern 3D** **printing**, data is a huge and growing part of our world. A major tool to manipulate and study this data is linear algebra.

In this course, we’ll learn basics of matrix algebra with an emphasis on application. This class has a focus on computer graphics while also containing examples in data mining.

You’ll learn to make an**image transparent, fade from one image to another, and rotate a 3D wireframe** model. We’ll also mine data.

[**13.) Introduction to Mathematical Thinking**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/mathematical-thinking)

**[](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/mathematical-thinking)**

**Course  Available :**[**Click Now**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/mathematical-thinking)

**Duration:** 8-10 weeks

**Instructor:** Stanford University (Coursera)

This ten-week course is designed with two particular audiences in mind. **First**, people who want to develop or improve mathematics-based, analytic thinking for professional or general life purposes. **Second**, high school seniors contemplating a mathematics or math-related major at college or university, or first-year students at college or university who are thinking of majoring in mathematics or a math-dependent subject.

To achieves this **aim**, the first part of the course has very little **traditional** mathematical content, focusing instead on the thinking processes required for mathematics. The more mathematical **examples** are delayed until later, when they are more readily assimilated.

**LEVEL II**

[**15.) Introduction to Linear Models and Matrix Algebra**](https://www.edx.org/course/introduction-linear-models-matrix-harvardx-ph525-2x-0)

**[](https://www.edx.org/course/introduction-linear-models-matrix-harvardx-ph525-2x-0)**

**Course  Available :**[**Click Now**](https://www.edx.org/course/introduction-linear-models-matrix-harvardx-ph525-2x-0)

**Duration:** 4 weeks

**Instructor:** Harvard University (edX)

Matrix Algebra underlies many of the **current tools** for experimental design and the analysis of high-dimensional data. In this introductory data analysis course, we will use **matrix algebra** to represent the linear models that commonly used to model differences between experimental units.

They perform statistical inference on these differences. Throughout the course we will use the **R programming** language.

[**17.) Bayesian Statistics: From Concept to Data Analysis**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/bayesian-statistics)

**[](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/bayesian-statistics)**

**Course  Available :**[**Click Now**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/bayesian-statistics)

**Duration:** 4 weeks

**Instructor:** University of California (Coursera)

This course introduces the Bayesian approach to statistics, starting with the concept of probability and moving to the analysis of data. We will learn about the philosophy of the Bayesian approach as well as how to implement it for common types of data. They **compare** the Bayesian approach to the more commonly-taught Frequentist approach, and see some of the benefits of the Bayesian approach.

In particular, the Bayesian approach allows for better accounting of uncertainty, results that have more intuitive and interpretable meaning, and more explicit statements of assumptions. This course combines **lecture videos, computer demonstrations, readings, exercises, and discussion boards** to create an active learning experience.

[**19.) Game Theory 1**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/game-theory-1)

**[](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/game-theory-1)**

**Course  Available :**[**Click Now**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/game-theory-1)

**Duration:** 8 weeks

**Instructor:** Stanford University and University of British Columbia (Coursera)

Popularized by movies such as “**A Beautiful Mind**,” game theory is the mathematical modeling of strategic interaction among rational (and irrational) agents. Beyond what we call `**games**‘ in common language, such as **chess, poker, soccer**, etc., it includes the modeling of conflict among nations, political campaigns, competition among firms, and trading behavior in markets such as the NYSE.

How could you begin to **model keyword auctions**, and peer to peer file-sharing networks, without accounting for the incentives of the people using them? The course will provide the **basics**: representing games and strategies, the extensive form (which computer scientists call game trees), Bayesian games (modeling things like auctions), repeated and stochastic games, and more.

[**20.) Game Theory II: Advanced Applications**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/game-theory-2)

**[](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/game-theory-2)**

**Course  Available :**[**Click Now**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/game-theory-2)

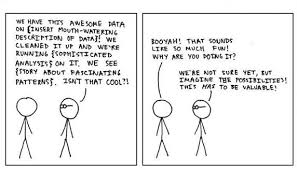
**Duration:** 5 weeks

**Instructor:** Stanford University and The University of British Columbia (Coursera)

Over four weeks of lectures, this advanced course considers how to **design interactions** between agents in order to achieve good social outcomes.

**Three main** topics are covered: **social choice theory** (i.e., collective decision making and voting systems), **mechanism design**, and **auctions**.

[**21.) Advanced Linear Models for Data Science 1: Least Squares**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/linear-models)

**[](https://www.udacity.com/course/intro-to-descriptive-statistics--ud827)**

**Course  Available :**[**Click Now**](https://www.udacity.com/course/intro-to-descriptive-statistics--ud827)

**Duration:** 6 weeks

**Instructor:** Johns Hopkins University (Coursera)

This class is an introduction to least squares from a linear algebraic and mathematical perspective. Before beginning the class make sure that you have the following: –

A basic understanding of linear algebra and **multivariate** calculus.

A basic understanding of **statistics and regression** models.

At least a little familiarity with **proof based** mathematics.

Basic knowledge of the **R** programming language.

[**22.) Advanced Linear Models for Data Science ( Statistical Linear Models )**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/linear-models-2)

**[](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/linear-models)**

**Course  Available :**[**Click Now**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/linear-models)

**Duration:** 6 weeks

**Instructor:** Johns Hopkins University

This class is for students who already have had a class in regression modeling and are familiar with the area who would like to see a more **advanced** treatment of the topic.

This class is an introduction to least squares from a**linear algebraic** and mathematical perspective. Before beginning the class make sure that you have the following:

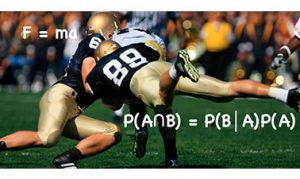
A basic understanding of linear algebra and multivariate calculus.

A basic understanding of statistics and regression models.

At least a little familiarity with proof based mathematics.

Basic knowledge of the R programming language.

[**22.) Maths in Sports**](https://www.edx.org/course/math-sports-notredamex-mat150x#!)

**[](https://www.edx.org/course/math-sports-notredamex-mat150x#!)**

**Course  Available :**[**Click Now**](https://www.edx.org/course/math-sports-notredamex-mat150x#!)

**Duration:** 8 weeks

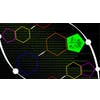
**Instructor:** University of Notre Dam (edX)

In this course you will learn to use some mathematical **tools** that can help **predict and analyze sporting** performances and outcomes. This course will **help** coaches, players, and enthusiasts to make **educated decisions** about strategy, training, and execution.

They will discuss topics such as the **myth** of the Hot Hand and the **curse** of the Sports Illustrated cover; how understanding data can improve athletic performance; and how best to pick your Fantasy Football team.

**LEVEL III**

[**23.) Statistics for Genomic Data Science**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/statistical-genomics)

**[](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/statistical-genomics)**

**Course  Available :**[**Click Now**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/statistical-genomics)

**Duration:** 4 weeks

**Instructor:** Johns Hopkins University

This course is An introduction to the statistics behind the most **popular genomic** data science projects.

This is the sixth course in the **Genomic Big Data Science Specialization** from Johns Hopkins University.

[**24.) Discrete Optimization**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/discrete-optimization)

**[](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/discrete-optimization)**

**Course  Available :**[**Click Now**](https://click.linksynergy.com/deeplink?id=KYddkQJZ4c4&mid=40328&murl=https://www.coursera.org/learn/discrete-optimization)

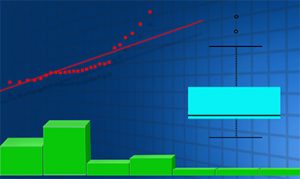
**Duration:** 8 weeks

**Instructor:** University of Melbourne (Coursera)

This class teaches you how to solve complex search problems with **discrete optimization** concepts and algorithms, including constraint programming, local search, and mixed-integer programming.

This class is an introduction to **discrete optimization** and exposes students to some of the most fundamental concepts and algorithms in the field. It **covers** constraint programming, local search, and mixed-integer programming from their foundations to their applications for complex practical problems in areas such as scheduling, vehicle routing, supply-chain optimization, and resource allocation.

[**25.) Biostatistics for Big Data Applications**](https://www.edx.org/course/biostatistics-big-data-applications-utmbx-stat101x#!)

**[](https://www.edx.org/course/biostatistics-big-data-applications-utmbx-stat101x#!)**

**Course  Available :**[**Click Now**](https://www.edx.org/course/biostatistics-big-data-applications-utmbx-stat101x#!)

**Duration:** 8 weeks

**Instructor:** utmb Health (edX)

This course provides a broad foundation of statistical terms and concepts as well as an introduction to the **R** statistical software package. The topics covered are fundamental components of **bio-statistical methods** used in both omics and population health research.

Working with biomedical big data presents many challenges; familiarity with common statistical terms and definitions, and understanding basic statistical theory will help you overcome those challenges.